**DOCKET NO. D-2003-25-2**

**DELAWARE RIVER BASIN COMMISSION**

**Discharge to a Tributary of Special Protection Waters**

**Great Wolf Lodge of the Poconos**
**Sewage Treatment Plant Modification Project**
**Pocono Township, Monroe County, Pennsylvania**

## PROCEEDINGS

This docket is issued in response to an emergency application submitted to the Delaware River Basin Commission (DRBC or Commission) by Borton Lawson Engineers on behalf of the Great Wolf Lodge on July 14, 2006 (Application), for review of a modification to the existing wastewater treatment plant. The project was approved by the Pennsylvania Department of Environmental Protection (PADEP) on July 3, 2006, but withheld its Water Quality Management Permit No. 4506407 until the project was approved by the Commission. The Commission's Executive Director granted an Emergency Certificate on July 24, 2006 for the project.

The application was reviewed for approval under Section 3.8 of the Delaware River Basin *Compact*. The Monroe County Planning Commission has been notified of pending action. A public hearing on this project was held by the DRBC on September 27, 2006.

## A. DESCRIPTION

**1.** **Purpose**. The purpose of this project is to modify the resort's existing 90,000 gallon per day (gpd) wastewater treatment plant (WWTP) with the addition of a 60,000 gallon equalization tank and associated modifications.

**2.** **Location**. The project WWTP is located on the northwest corner of the intersection of State Route 611 and Interstate Route 80 in Pocono Township, Monroe County, Pennsylvania. The project WWTP discharges to Scot Run, a tributary to the Pocono Creek. The discharge is located in the drainage area to the Middle Delaware Special Protection Waters on a tributary to the Delaware River at River Mile 213 - 4.0 – 1.0 – 13.15 - 1.0 (Delaware River, Brodhead Creek, McMichael Creek, Pocono Creek, Scot Run).

The project outfall is located in the Brodhead Creek watershed as found on the Mount Pocono, Pennsylvania, United States Geological Survey (USGS) Quad as follows:

| OUTFALL NO. | LATITUDE (N) | LONGITUDE (W) |
|---|---|---|
| 001 | 41˚ 03' 43" | 75˚ 19' 02" |

**3.** **Area served**. The project STP will serve the proposed Great Wolf Lodge, a 400-unit hotel with an indoor water park. For the purpose of defining the Area Served, the Application is incorporated herein by reference consistent with conditions contained in the Decision section of this docket.

**4.** **Physical features**.

a. **Design criteria**. The applicant plans to construct a permanent 60,000 gallon equalization tank as an addition to the existing 0.09 million gallons per day (mgd) WWTP that was designed to provide tertiary treatment for the 400-unit hotel; the WWTP also treats filtered backwash from the applicant's Great Wolf Lodge indoor water park. An advanced activated sludge treatment process known as, the Biologically Engineered Single Stage Treatment (BESST) system is utilized to meet the stringent effluent limitations of State Water Plan Watershed No. 1E. Chemical, physical, and biological processes are utilized to remove BOD and phosphorus, in addition to nitrification and denitrification. Treatment plant effluent is disinfected via ultraviolet light and discharged to Scot Run when on-site spray irrigation is not achievable. Approximately 21 acres of the applicant's 96 acre parcel is reserved for spray irrigation of effluent on a seasonal basis at a rate of up to 6.92 inches per month.

b. **Facilities**. The proposed STP will consist of an influent screening device, a comminutor, a surge tank within the BESST package plant, which will also features two aeration tanks, a chemical treatment tank and two final settling tanks. The effluent from the BESST system will undergo sand filtration and ultraviolet disinfection prior to, weather permitting, on-site spray application or discharge to Scot Run in the Brodhead Creek Watershed, when the weather is not suitable for beneficial reuse. The 21 acre spray field will be divided into three zones with a maximum effluent application rate of 6.92 inches/month.

The docket holder's wastewater treatment facility discharges to waters classified as SPW and is required to have available emergency power. The Great Wolf Lodge WWTP has emergency power provided by a diesel-fueled generator

The docket holder's wastewater treatment facility is not staffed 24 hours per day, and is required to provide a remote alarm system that continuously monitors plant operations. An autodialer system has been incorporated into the design since the original plant approval.

The docket holder's existing wastewater treatment facility has prepared and implemented an emergency management plan.

The docket holder's existing wastewater treatment facility is not required to provide "Best Demonstrable Technology" (BDT) as a minimum level of treatment.

The project facilities are above the 100-year flood elevation.

Wasted sludge will be hauled off-site by a licensed hauler for deposit at a State-approved facility.

**c. Water withdrawals**. The potable water supply in the project service area is provided by the Brodhead Creek Regional Authority (formerly the Stroudsburg Municipal Authority).

**d. NPDES Permit / DRBC Docket**. The PADEP issued NPDES Permit No. PA0064319 on September 3, 2003, which includes final effluent limitations for the project discharge of 0.09 mgd to surface waters classified by the PADEP as HQ-CWF (High Quality – Cold Water Fishery). The following average monthly effluent limits are among those listed in the NPDES permit and meet or are more stringent than the effluent requirements of the DRBC.

**EFFLUENT TABLE A-1**: DRBC Parameters Included in NPDES permit No. PA0064319 for Outfall 001

| OUTFALL DSN001 | | |
|---|---|---|
| **PARAMETER** | **LIMIT** | **MONITORING** |
| CBOD5 | 10.0 mg/l (85% Removal*) | As required in the NPDES permit |
| Total Suspended Solids | 10.0 mg/l (85% Removal*) | As required in the NPDES permit |
| Ammonia – N (summer) | 1.5 mg/l | As required in the NPDES permit |
| Ammonia – N (winter) | 4.5 mg/l | As required in the NPDES permit |
| Fecal Coliform | 200/100 ml as geometric average | As required in the NPDES permit |
| pH (Standard Units) | 6 to 9 at all times | As required in the NPDES permit |
| Dissolved Oxygen | Minimum of 6.0 mg/l | As required in the NPDES permit |

* DRBC Requirement

Effluent Table A-2 contains effluent limits and monitoring requirements for DRBC parameters not included in NPDES Permit No. PA0064319.

**EFFLUENT TABLE A-2**: DRBC Parameters for Outfall 001

| OUTFALL 001 | | |
|---|---|---|
| **PARAMETER** | **LIMIT** | **MONITORING** |
| Nitrate – Nitrite – N * | Monitor & Report Only * | One per month* |
| Total Phosphorous * | Monitor & Report Only * | One per month* |
| Total Dissolved Solids***** | 1,000 mg/l * | One per quarter * |

* DRBC Requirement

**e. Cost**. The overall cost of this project is estimated to be $192,000.

**f. Relationship to the Comprehensive Plan**. The project is located in the drainage area of DRBC's Special Protection Waters. The boundary of the Delaware Water Gap National

Recreation Area and the confluence of the Brodhead Creek is designated as "Outstanding Basin Waters".

## B. FINDINGS

The GWL is an indoor water park, and operates as a resort and hotel. Docket No. D-2003-25, approved on October 15, 2003, provided for the construction of the WWTP and a discharge of 90,000 gallons per day (gpd) to Scot Run (Brodhead Creek Watershed), which is designated by the PADEP as a high quality cold water fishery. The GWL opened in October 2005, and experienced operational problems in December 2005 reportedly due to extreme variations in peak flows, internal plumbing construction mistakes and grease trap failures. The operational problems resulted in the discharge of untreated sewage into Scot Run for several days in both December 2005 and March 2006. PADEP required GWL to transport wastewater to an off-site treatment plant until the adjustments to the WWTP were done. The WWTP resumed operation in April 2006. GWL has indicated that extremely variable flows, especially during weekends, sometimes result in the exceedance of the daily permit capacity, and make maintaining biomass in the plant especially difficult. The existing plant has a ~20,000 gallon equalization tank (~22% of daily flow).

GWL has made corrections to internal plumbing and has added an additional 5,000 gallon grease trap. On July 14, 2006, GWL requested emergency approval for the construction of a permanent 60,000 gallon equalization tank. DRBC granted an emergency certificate to GWL on July 24, 2006. The 60,000 gallon equalization tank was sized based upon a flow metering study conducted by GWL. Coupled with the existing 19,670 gallon tank, the total equalization volume will be close to 80,000 gallons (88% of average daily flow). The additional capacity should allow flows to be gradually treated by the plant during low flow periods in mid-week. GWL had three 20,000 gallon temporary tanks located on site until they received Commission and PADEP approval for the permanent 60,000 equalization tank. By letter dated July 3, 2006, PADEP has indicated that they would approve the 60,000 equalization tank and other modifications by issuing Water Quality Management Permit No. 4506407, contingent upon Commission approval. In addition, there had been numerous odor complaints from nearby residents. It is believed that the temporary outdoor equalization tanks may have contributed to the odor complaints, and GWL has indicated that this is one of the reasons they sought emergency approval.

Pursuant to Section 2.3.9.B of the *Administrative Manual, Part II, Rules of Practice and Procedure* (Rules), an Emergency Certificate was issued, temporarily granting GWL permission to proceed with the construction of a 60,000 gallon equalization tank. The certificate will expire upon a final determination by the DRBC, following Section 3.8 review and a public hearing in accordance with the Rules.

In 1992, the DRBC adopted Special Protection Waters requirements, as part of the DRBC Water Quality Regulations (WQR), designed to protect existing high water quality in applicable areas of the Delaware River Basin. One hundred twenty miles of the Delaware River from Hancock, New York downstream to the Delaware Water Gap has been classified by the DRBC as SPW. This stretch includes the sections of the river federally designated as "Wild and Scenic" in 1978 -- the Upper Delaware Scenic and Recreational River and the Delaware Water Gap National Recreation Area -- as well as an eight-mile reach between Milrift and Milford, Pennsylvania which is not federally designated. The SPW regulations apply to this 120-mile stretch of the river and its drainage area. (Upper/Middle SPW)

Article 3.10.3A.2.e.1). and 2). of the *Water Quality Regulations, Administrative Manual - Part III*, states that projects subject to review under Section 3.8 of the Compact that are located in the drainage area of Special Protection Waters must submit for approval a Non-Point Source Pollution Control Plan that controls the new or increased non-point source loads generated within the portion of the applicant's service area which is also located within the drainage area of Special Protection Waters. The service area of the (applicant) is located within in the drainage area to the Special Protection Waters. Since this project does not entail additional construction and expansion of (facilities/service area) (i.e., there aren't any new or increased non-point source loads associated with this approval), the non-point source pollution control plan requirement is not applicable at this time. Accordingly, Special Conditions II. r. and s. have been included in the Decision section of this docket.

At the project site, Scot Run has an estimated seven day low flow with a recurrence interval of ten years (Q-7-10) of approximately 0.1 cfs and is therefore classified in accordance with the DRBC's Water Code as an intermittent stream. The ratio of this low flow to the project discharge is approximately 0.7 to1. Less than 2 river miles downstream from the project outfall is Pocono Creek, which has a Q-7-10 of 1.15 mgd (1.78 cfs). The ratio of this low flow to the average design wastewater discharge from the new plant is 12.8 to 1. Also, during seasonal low flow periods, it is likely that the applicant's direct discharge frequency to Scot Run will be substantially reduced when the spray irrigation alternate discharge is probable.

The nearest surface water intake of record for public water supply downstream of the project discharge is operated by the City of Easton on the Delaware River located over 40 river miles distant. The Brodhead Creek Regional Authority's surface water intake on the Brodhead Creek is located above the confluence of the McMichael Creek and the Brodhead Creek.

The project received Act 537 Plan approval from PADEP on July 15, 2003.

The proposed project is designed to produce a discharge meeting the effluent requirements as set forth in the Water Quality Standards of the DRBC.

For the WWTP's original docket approval, the docket holder submitted a stormwater management plan, including erosion and sediment control, which satisfactorily addresses its non-point pollutant control strategy. The plan featured stormwater runoff collection, conveyance, and detention with man-made wetlands for filtration and polishing prior to discharge from the site. Two parking zone drainage areas were provided with separation systems, i.e. inlet systems that allow for separation and storage of pollutants, while directing flow to provide the most efficient treatment. The system removes free oils, suspended sediment and floatables. After treatment of the parking area runoff by BaySaver units, parking area stormwater and all other surface runoff is directed through a series of grass and rock lined swales and routed through wet detention basins seeded with wetland meadow vegetation, and then discharged to Scot Run via swales and piping. Swale and detention basin design encourage infiltration of stormwater from the site. In addition to the wet detention basins with wetland vegetation seeding, a forested buffer remains around a majority of the detention basin perimeters. Forested buffers will increase evapo-transpiration of percolated waters during the growing season and help to minimize sediment transport.

The docket holder submitted to the DRBC for concurrent review with PADEP an analysis of the proposed discharge relative to meeting DRBC's Special Protection Waters criteria for "no measurable change". PADEP, in concurrence with the DRBC, had determined that the applicant's NPDES permit sufficiently conditions the discharge project so that the effluent will not cause a measurable change to Special Protection Waters at the Brodhead Creek confluence with the Delaware River, located approximately 19 river miles downstream.

The project does not conflict with the Comprehensive Plan, and is designed to prevent substantial adverse impact to the water resources related environment, while sustaining the current and future water uses and development of the water resources of the Basin.

## C. DECISION

I. Effective on the approval date for Docket No. D-2003-25-2 below, Docket No. D-2003-25 is terminated and replaced by Docket No. D-2003-25-2.

II. The project and appurtenant facilities as described in the Section A of this docket entitled "Physical features" above are approved pursuant to Section 3.8 of the *Compact*, subject to the following conditions:

a. Docket approval is subject to all conditions, requirements, and limitations imposed by the PADEP in its NPDES permit (and Part II Permit if appropriate), and such conditions, requirements, and limitations are incorporated herein, unless they are less stringent than the Commission's. Commission approval of this docket is contingent on the PADEP's approval of the NPDES permit.

b. The facility and operational records shall be available at all times for inspection by the DRBC.

c. The facility shall be operated at all times to comply with the requirements of the *Water Quality Regulations* of the DRBC.

d. The docket holder shall comply with the requirements contained in the Effluent Tables in the Section A.4.d. of this docket and shall submit the required the monitoring data directly to both PADEP and the DRBC.

e. Except as otherwise authorized by this docket, if the docket holder seeks relief from any limitation based upon a DRBC water quality standard or minimum treatment requirement, the docket holder shall apply for approval from the Executive Director or for a docket revision in accordance with Section 3.8 of the *Compact* and the *Rules of Practice and Procedure*.

f. If at any time the receiving treatment plant proves unable to produce an effluent that is consistent with the requirements of this docket approval, no further connections shall be permitted until the deficiency is remedied.

g. Nothing herein shall be construed to exempt the docket holder from obtaining all necessary permits and/or approvals from other State, Federal or local government agencies having jurisdiction over this project.

h. The discharge of wastewater shall not increase the ambient temperatures of the receiving waters by more than 5°F until stream temperatures reach 50°F, nor by more than 2°F when stream temperatures are between 50°F and 58°F, nor shall such discharge result in stream temperatures exceeding 58°F.

i. Sound practices of excavation, backfill and reseeding shall be followed to minimize erosion and deposition of sediment in streams.

j. Within 10 days of the date that construction of the project has started, the docket holder shall notify the DRBC of the starting date and scheduled completion date.

k. Upon completion of construction of the approved project, the docket holder shall submit a statement to the DRBC, signed by the docket holder's engineer or other responsible agent, advising the Commission that the construction has been completed in compliance with the approved plans, giving the final construction cost of the approved project and the date the project is placed into operation.

l. This docket approval shall expire three years from date below unless prior thereto the docket holder has commenced operation of the subject project or has expended substantial funds (in relation to the cost of the project) in reliance upon this docket approval.

m. The docket holder is permitted to treat and discharge the categories of wastewaters defined in the "Area Served" section of this docket.

n. The docket holder shall make wastewater discharge in such a manner as to avoid injury or damage to fish or wildlife and shall avoid any injury to public or private property.

o. No sewer service connections shall be made to newly constructed premises with plumbing fixtures and fittings that do not comply with water conservation performance standards contained in Resolution No. 88-2 (Revision 2).

p. Nothing in this docket approval shall be construed as limiting the authority of DRBC to adopt and apply charges or other fees to this discharge or project.

q. The issuance of this docket approval shall not create any private or proprietary rights in the waters of the Basin, and the Commission reserves the right to amend, suspend or rescind the docket for cause, in order to ensure proper control, use and management of the water resources of the Basin.

r. Prior to allowing connections from any new service areas or any new developments, the docket holder shall either submit and have approved by the Executive Director of the DRBC a Non-Point Source Pollution Control Plan (NPSP) in accordance with Section 3.10.3.A.2.e, or receive written confirmation from the Executive Director of the DRBC that the new service area is in compliance with a DRBC approved NPSP.

s. The docket holder's original facility-wide Non-Point Source Pollution Control Plan meets the general requirements of DRBC *Water Quality Regulations*, Article 3.10.3.A.2.e.1).

t. In 1992, this portion of the Delaware River and its tributaries was classified as Special Protection Waters. The docket holder will provide assurance to the Executive Director that it is in compliance with Article 3.10.3.2.A.d.1), 2) and 4) of the DRBC *Water Quality Regulations*.

u. The docket holder shall operate the on-site 21 acre effluent spray irrigation alternate discharge when conditions allow.

v. A complete application for the renewal of this docket, or a notice of intent to cease the operations (withdrawal, discharge, etc.) approved by this docket by the expiration date, must be submitted to the DRBC at least 12 months prior to the expiration date below (unless permission has been granted by the DRBC for submission at a later date), using the appropriate DRBC application form. In the event that a timely and complete application for renewal has been submitted and the DRBC is unable, through no fault of the docket holder, to reissue the docket before the expiration date below, the terms and conditions of this docket will

remain fully effective and enforceable against the docket holder pending the grant or denial of the application for docket approval.

w. The Executive Director may modify or suspend this approval, or require mitigating measures, pending additional review.

x. The docket holder and any other person aggrieved by a reviewable action or decision taken by the Executive Director or Commission pursuant to this docket may seek an administrative hearing pursuant to Articles 5 and 6 of the Commission's *Rules of Practice and Procedure,* and after exhausting all administrative remedies may seek judicial review pursuant to Article 6, section 2.6.10 of the *Rules of Practice and Procedure* and section 15.1(p) of the Commission's *Compac*t.

**BY THE COMMISSION**

**DATE APPROVED: September 27, 2006**

**EXPIRATION DATE: September 27, 2011**